

2.0 Getting Started

2.1 Hardware and Software Requirements

The IWAIR tool consists of a 32-bit Visual Basic application and an Access 2000 database. It is designed to run on an IBM-compatible computer with Windows 95, 98, NT4, or 2000. The recommended hardware configuration to run IWAIR includes at least 32 MB of RAM (preferably 64 MB), a Pentium 120 MHz CPU processor (preferably Pentium II or above), and 30 MB of free hard-drive space (preferably 50 MB).

The most recent version of the appropriate Windows operating system must be installed on the computer. As of the publication of this document, the most recent versions are Windows 95B, Windows 98 SE, Windows NT4 with Service Pack 6a, and Windows 2000 with Service Pack 2. Service packs are available from the Microsoft Web site (www.microsoft.com). Microsoft recommends that these service packs be re-installed after any software is installed or uninstalled. If the computer is running Windows 95B or Windows 98SE, the distributed component model (DCOM) software also must be installed. This software is available from the Microsoft Web site (www.microsoft.com/com/dcom/dcom95/dcom1_3.asp for Windows 95, www.microsoft.com/com/dcom/dcom98/dcom1_3.asp for Windows 98). The program does not require any additional software when running under Windows NT or Windows 2000 (other than the latest service packs mentioned above).

2.2 Installing and Uninstalling the Program

You receive the IWAIR computer program on the Guidance CD-ROM. The installation consists of three files: setup.exe, setup.lst, and iwair.cab. Depending on the security settings of your operating system, this software may need to be installed and uninstalled by someone with administrator privileges. Instructions for installing and uninstalling the program are provided below. Any updated instructions are located on the Guidance CD-ROM in readme.txt.

Installing

1. Close all applications, such as word processors and e-mail programs. Close or disable virus protection software.¹
2. Insert the CD-ROM into your CD-ROM drive.

¹ Many virus protection programs interfere with or slow down the installation of software. You should scan any software files for viruses before installing.

3. Open MY COMPUTER.
4. Select the CD-ROM drive.
5. Double-click on setup.exe.
6. You will see some files being copied to your hard drive. The WELCOME TO THE IWAIR INSTALLATION PROGRAM screen then appears. If all your other applications were closed (Step 1), then click |OK|.
7. The next screen is IWAIR SETUP. This screen displays the default location for the IWAIR files to be installed. If you want to change the location, click the |CHANGE DIRECTORY| button and specify a different directory. Otherwise, just click the large button (shows a computer with an open box in front of it).
8. The next screen is IWAIR - CHOOSE PROGRAM GROUP. The default is to create a new program group named "IWAIR." You can change the program group if you prefer a different one. Press the |CONTINUE| button to install the program.
9. The next screen is IWAIR SETUP. The progress bar shows the progress of the files that are being installed to your hard drive.
10. The final screen displays the message, "IWAIR setup was completed successfully." Click on the |OK| button.
11. If you are using Windows 2000 or Windows NT4, you should install the latest Service Pack.
12. Restart your computer.

OR

1. Close all applications, such as word processors and e-mail programs. Close or disable virus protection software.²
2. Insert the CD-ROM into your CD-ROM drive.
3. Click on the Windows |START| button and select RUN.
4. Type "D:\SETUP" or, as appropriate, replace "D:" in this command with the correct drive designation for your CD-ROM drive.
5. Proceed with Step 6 above.

² Many virus protection programs interfere with or slow down the installation of software. You should scan any software files for viruses before installing.

Uninstalling

1. Click on the Windows |START| button.
2. Select SETTINGS, and then CONTROL PANEL.
3. Select ADD/REMOVE PROGRAMS.
4. Select IWAIR and then CHANGE/REMOVE. When asked “Are you sure you want to completely remove IWAIR and all of its components,” select the |YES| button.
5. If you are using Windows 2000 or Windows NT4, you should re-install your latest Service Pack and restart your computer.

2.3 Running IWAIR

To execute the program, press the Windows |START| button. Select PROGRAMS, IWAIR, IWAIR. (If you selected a different name for the group during the installation process, you must select PROGRAMS, then the group name you selected, then IWAIR.)

Begin working in IWAIR by clicking on the |START| button of the program title screen. IWAIR can model one unit (choice of four unit types: surface impoundment, land application unit, active landfill, and waste pile), up to six chemicals of concern, and up to five different receptors during a single simulation. Once IWAIR's |START| button is selected, the program automatically opens the METHOD, MET. STATION, WMU screen.

2.4 Navigating in IWAIR

The following tools facilitate interaction with the IWAIR program:

- Tabs
- Menus
- Command buttons
- Message prompts.

Each of these tools is explained in more detail in this section. Although this guide assumes the use of a mouse to navigate through the screens and features, you may also navigate using key strokes (see the “Navigation without the Mouse” explanation at the end of this section).

Tabs

Tabs facilitate navigation between the different screens in the program. Clicking a tab opens the screen associated with it. You can enter information and edit data on an open screen. There are six tabs, one for each of the following screens:

- METHOD, MET. STATION, WMU

- WASTES MANAGED
- WMU DATA FOR CHEMDAT8
- EMISSION RATES
- DISPERSION FACTORS
- RESULTS.

Table 2-1 describes each of these tabs and how each screen associated with a tab assists you in providing the program with the inputs needed to perform the calculations. The program automatically opens the next screen after the required information is entered into the data fields and the |DONE| command button is clicked.

At any time in the program, you can return to a screen that has already been visited by clicking the tab associated with the screen. You can view information entered on the screen and can also change any information entered on a previously visited screen. Changing data on a previously visited screen has no effect on screens before the changed screen, but does affect screens following the changed screen. Whenever you change data on a previously visited screen, you will have to proceed through the following screens in order (even if the data on them have been retained) to return to where you were before you went back and made the change; this is so that calculated values will be recalculated with the new data. For example, if you were on the EMISSION RATES screen and returned to the METHOD, MET STATION, WMU screen to change meteorological stations, you would still have to proceed through the WASTES MANAGED and WMU DATA FOR CHEMDAT8 screens, clicking on |DONE|, to return to the EMISSION RATES screen. If you enter data on a screen, return to a previous screen without clicking |DONE|, and make changes to the previous screen, the new data you entered will be lost, and you will need to re-enter them when you return to the screen you were working on. These data will not be lost if you do not change anything on the previous screen and if you return to the subsequent screen using |TAB| rather than |DONE|.

Menus

As shown in Figure 2-1, a menu is also provided with IWAIR that allows you to perform tasks such as starting a new run, loading data from a previous run, saving data from the current run, printing reports, and exiting the program. The menu options are covered in detail in Section 2.5.

Command Buttons

In addition to tabs and menus, one or more command buttons are provided on each screen that initiate an action by the program. For instance, click the |DONE| command button after you have entered all data on a screen to calculate and proceed to the next screen.

Message Prompts

The program uses message boxes to communicate important information and to confirm actions before executing a command. For instance, an error message is shown when incorrect, invalid, or incomplete information is entered.

Table 2-1. IWAIR Tabs and Associated Screens

Tab	Description of Screen Associated with Tab
Method, Met. Station, WMU	<ul style="list-style-type: none"> ■ Select calculation method (i.e., risk calculation or allowable waste concentration calculation). ■ Select WMU type. The WMU choices include surface impoundment, land application unit, active landfill, and waste pile. ■ Enter zip code or latitude and longitude of site to allow the program to select the most representative meteorological station from the program's 60 stations. ■ Select whether estimations will be made based on program-generated CHEMDAT8 emission rates and default ISCST3 dispersion factors, user-specified emission rates and default dispersion factors, or a combination of both IWAIR-generated and user-specified estimates.
Wastes Managed	<ul style="list-style-type: none"> ■ Identify up to six chemicals that are present in the waste managed in the WMU of concern. You can choose to view chemicals by CAS number or by chemical name (95 chemicals are included in the database that is installed with the IWAIR program). ■ Add or modify chemical data. ■ If you selected to perform a risk calculation and to use CHEMDAT8, you must provide the concentration of each chemical in the WMU.
WMU Data for CHEMDAT8	<p>This tab is enabled and its associated screens are opened if you elected to have IWAIR develop chemical-specific emission rates using EPA's CHEMDAT8 model. You must provide a variety of site-specific data (e.g., unit dimensions and waste loading information). Default values are provided adjacent to the data box for several of the input parameters.</p>
Emission Rates	<p>View and confirm CHEMDAT8 emission rates or enter user-specified emission rates. Enter source and justification for user-specified emission rates on this screen.</p>
Dispersion Factors	<p>Calculate dispersion factors or provide user-specified dispersion factors. Identify up to five receptors (i.e., potentially exposed individuals). For each receptor, specify the distance to the receptor and the receptor type (i.e., resident or worker). The program calculates the dispersion factors based on distance to the receptor, as well as WMU area and meteorological station. Alternatively, you may enter your own dispersion factors. Enter source and justification for the user-supplied dispersion factors on this screen.</p>
Results	<p>Two different results screens are associated with this tab, one for risk calculation and one for allowable concentration calculation. You can</p> <ul style="list-style-type: none"> ■ Select the receptor for which the calculation is to be performed. ■ View the chemicals of concern that were selected under the WASTES MANAGED screen. ■ View input data determined in the previous screen (distance from the unit to the receptor, receptor type, and dispersion factors). IWAIR uses these data in the risk or waste concentration calculations. ■ View and override program-supplied health benchmarks. If you choose to override these data, you should also provide the source and justification for the user-supplied benchmarks. ■ In the risk calculation mode, click the CALCULATE button to generate and display risk estimates for carcinogens, and HQs for noncarcinogens. ■ In the allowable concentration mode, select target risk level (e.g., 1E-5, 1E-6) and/or an HQ (e.g., 0.5, 1) to serve as the starting point for the allowable concentration calculation for each chemical. Then click the CALCULATE button to generate and display the allowable waste concentrations for each chemical of concern.

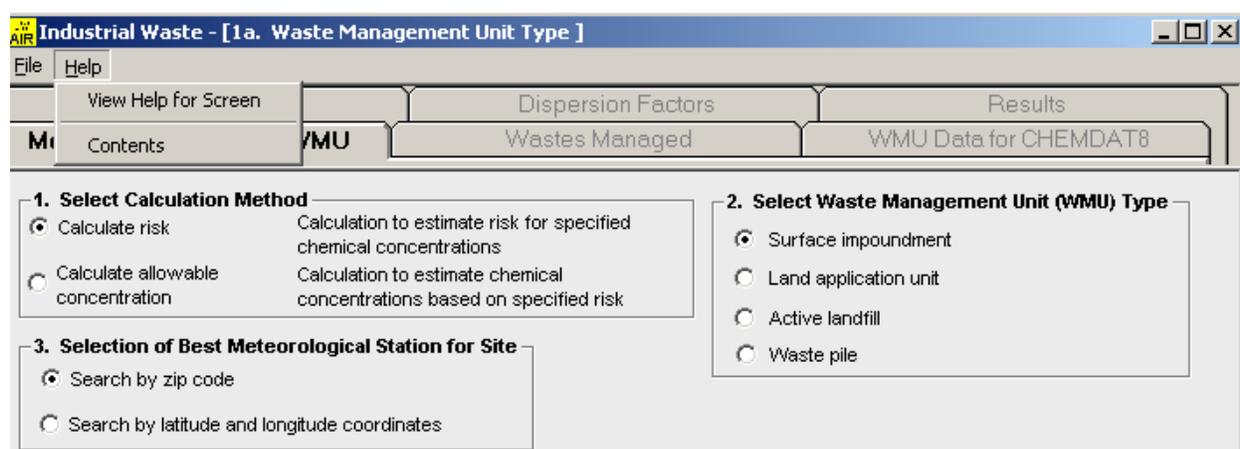
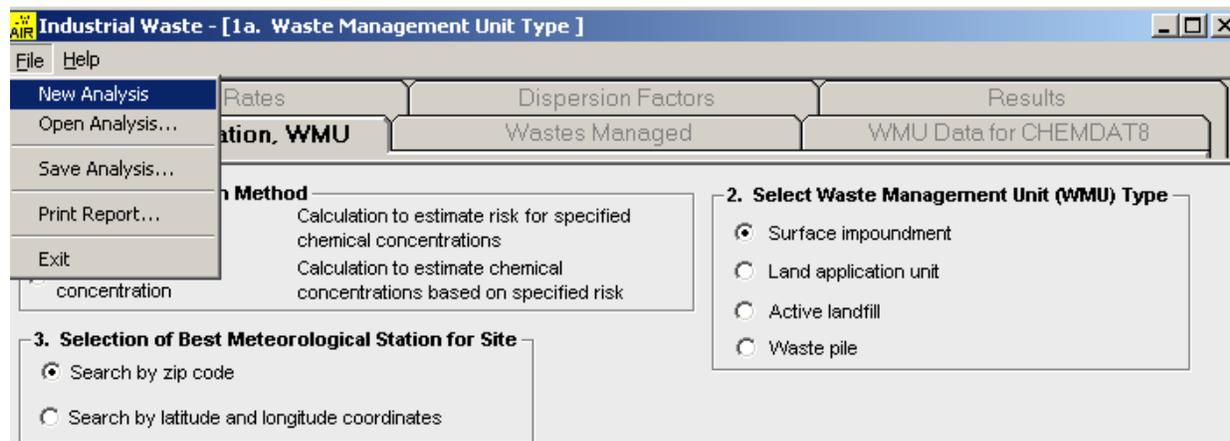


Figure 2-1. Menu bar in the IWAIR program.

Navigation without the Mouse

Although you typically navigate IWAIR's graphical user interface using a mouse or other pointing device, the keyboard may be used to make selections and proceed through the screens. The **|TAB|** key moves the cursor from one input box or control (e.g., command button, option button, drop-down list) to the next. The **|BACK-TAB|** key (**|SHIFT| + |TAB|**) moves the cursor in the reverse order on the current screen. When the cursor is on a command button, press the **|ENTER|** key to "click" the button. Option buttons always appear in a set of at least two options; when the cursor is on any option button, press a cursor arrow key to mark a different option button as being selected and then use the **|TAB|** key to move out of that option button group. A drop-down box displays one choice of several; when the cursor is on the box, use the up-arrow and down-arrow keys to display the desired choice. At any time, you can press the **|ALT|** key to access the **FILE** and **HELP** menus at the top of the window.

2.5 Menus

As shown in Figure 2-1, the IWAIR menu bar consists of two choices: FILE and HELP. HELP is described in Section 2.6. The FILE menu options are described in this section.

The FILE menu provides the following features: start a new analysis, save and re-open an analysis, print reports, and exit IWAIR. Each of these features is discussed below.

2.5.1 Start a New Analysis

During an IWAIR session, you may want to discard all data and start over with a new analysis, so as to model a different WMU, different chemicals, or a different scenario. The NEW ANALYSIS option lets you clear the current analysis without exiting and restarting IWAIR. It is not necessary to select NEW ANALYSIS when you start IWAIR.

NEW ANALYSIS clears all entered data and resets IWAIR to initial defaults, with one exception: the facility information for printed report headers is retained when you select NEW ANALYSIS. This information may be edited when you print a report.

To start a new analysis, select FILE, NEW ANALYSIS. You will be prompted with “Discard all changes and restart calculations?”

- Click on |YES| to start a new analysis.
- Click on |NO| to return to your existing analysis.

2.5.2 Save and Re-Open an Analysis

You can save an analysis and re-open it later using the FILE, SAVE ANALYSIS and FILE, OPEN ANALYSIS features. IWAIR saves all user-entered data, as well as calculated and user-override emission rates and dispersion factors, and current facility information for report headers (if any has been entered during the session). It does not save calculated values from the RESULTS screen (air concentrations, risks, HQs, and allowable concentrations); these must be recalculated from the RESULTS screen.

IWAIR does not save chemical properties data or user-defined health benchmarks with a saved analysis, but uses the current chemical properties and user-defined health benchmark values in the chemical database at the time an analysis is re-opened. Therefore, the results may change if you have changed the chemical properties or user-defined health benchmarks of any chemical in the saved analysis since you saved the analysis. Changes to user-defined health benchmarks will be reflected when you recalculate the results, as you are required to do. Changes to other chemical properties that affect emission rates will not be reflected unless you recalculate emission rates by clicking |DONE| on the WMU DATA FOR CHEMDAT8 screen. In addition, the chemical database must contain entries for all chemicals in the saved analysis, or the analysis will not reload. This would only occur if you had saved an analysis containing user-defined chemicals, then subsequently deleted any of those chemicals from the chemical database, or if you tried to open a file saved by another user containing user-defined chemicals specific to his or her

chemical database and not found in yours. See Appendix A, Sections A.4.2 and A.5.2, for more details on adding or modifying chemical data.

IWAIR can only reload analyses saved from the current version of IWAIR.

You can save an analysis only from the RESULTS screen. You can open a saved analysis from any screen, but once the analysis is reloaded, you will be returned to the METHOD, MET. STATION, WMU screen. You should then move through the tabs in sequence by clicking |DONE|, even if you have not changed anything. This will recalculate your analysis (though you will have to re-enter any user-override emission rates or dispersion factors) and ensure the accuracy of the results. If you wish to view saved user-override emission rates or dispersion factors before you do this, you can use the tabs to move directly to other screens without clicking |DONE| on each screen. IWAIR was not designed to do calculations other than as part of a complete sequence through the screens. Therefore, although you may be able to view results by recalculating only on the RESULTS screen (without clicking through the previous screens using the |DONE| buttons), doing so may result in model errors.

If an analysis fails to reload (either because it is missing a chemical or was saved from a previous version of IWAIR), you will be returned to the METHOD, MET. STATION, WMU tab with all values reset, as if you had selected NEW ANALYSIS.

To save the current analysis, navigate to the RESULTS screen, and select FILE, SAVE ANALYSIS. This opens a SAVE AS dialog box.

- Enter the desired file name in the FILE NAME box and click on |SAVE| to save the analysis to a new file.
- Click on an existing file name and click on |SAVE| to save the analysis over an existing file. You will be warned that the file already exists and asked if you want to replace it.
 - Click on |YES| to replace the existing file.
 - Click on |NO| to return to the SAVE AS box and change the file name.
- Click on |CANCEL| to abort saving the analysis; you will be returned to the current analysis.

To reload a previously saved analysis, select FILE, OPEN ANALYSIS. You will be prompted with “You will lose unsaved data. Continue?”

- Click on |YES| to open a FILE OPEN dialog box; from this box, select the desired file by clicking on it.
 - Click on |OPEN| or double-click on the file name to open it. You may see the IWAIR screens flashing on your screen as IWAIR reloads your data.

- Click on |CANCEL| to abort opening a saved analysis and return to your existing analysis.
- Click on |No| to return to your existing analysis.

2.5.3 Print Reports

You can print a report containing the data and results from the current analysis using the PRINT REPORT function. Reports are divided into five sections:

- Part 1a: General Parameters. This section includes facility information; information on the meteorological station, WMU type, and computation options used; and WMU characteristics. The facility information for the header includes facility name, facility type, address, date of sample analysis, name of user, and additional information; you will be prompted to enter or edit this, if you desire, before printing the report.
- Part 1b: Chemical Properties. This section includes the CAS number and all chemical properties except health benchmarks for each chemical in the analysis.
- Part 2: Health Benchmark Information. This section includes the IWAIR and user-defined health benchmarks and references for each chemical in the analysis.
- Part 3: Receptors and Dispersion Factors. This section includes the receptor data, IWAIR and user-override dispersion factors, and exposure duration for each receptor.
- Part 4: Final Results. This section includes the waste concentration, IWAIR and user-override emission rates, and the risk and HQ for each chemical and receptor.

The exact data in each report vary somewhat depending on the type of WMU and the type of analysis. The reports are 5 to 8 pages long, depending on how many chemicals and receptors you have selected. The report only prints in full and to the default printer. You cannot print selected pages or sections, nor can you print reports to a file.

The facility information you enter for the report header is retained until you exit IWAIR; each time you print a report, you have the option to edit it. This information is saved in a saved analysis; therefore, if you open a saved analysis, the saved information will overwrite the current information.

You can print a report only once you have completed an analysis (i.e., you have reached the RESULTS screen). Once you have done this, you can print a report from any screen (i.e., if you have gone back to look at a previous screen); however, printing a report always returns you to the RESULTS screen, regardless of where you printed from.

To print a report, select FILE, PRINT REPORT. You will be prompted with “Edit facility information for report header?”

- Click on |YES| to enter or edit facility information to be printed in the report header.
- Click on |No| to retain the current facility information for the report header (or to leave it blank if you have not entered facility information during the current IWAIR session).
- Click on |CANCEL| to abort printing.

Once you have edited (or chosen not to edit) the facility information for the report header, you will be prompted to “Click OK to route the reports to local printer.” The report cannot be aborted at this point. Reports are printed to the default printer defined on your system.

2.5.4 Exit IWAIR

To exit IWAIR, select FILE, EXIT, or click on the X in the upper right corner of the screen. IWAIR will ask “Do you want to exit IWAIR?”

- Click on |YES| to exit IWAIR. Any unsaved data will be lost.
- Click on |No| to return to your analysis.

2.6 Online Help

The program provides online help that can be accessed from any screen, either by pressing the |F1| key or by selecting the HELP menu. The |F1| key and the VIEW HELP FOR SCREEN selection on the HELP menu display the information corresponding to Sections 4 and 5 of this document that is pertinent to the currently displayed program screen. A hyperlink at the top of the HELP screen brings up the parameter guidance help corresponding to Appendix B of this document. In some cases, this may be preceded by hyperlinks for risk versus allowable concentration calculations. The CONTENTS selection on the HELP menu displays the table of contents for the online help.

2.7 Troubleshooting

Table 2-2 lists some common problems you may encounter and how to solve them.

Table 2-2. Troubleshooting Common Problems in IWAIR

Problem Category	Description of Problem	Solutions
Installation	Windows 95B and NT4 SP6a ask to restart computer to update Windows system files.	Click on YES . After restart is complete, double-click on setup.exe again to finish the install. Windows system files updated will be in the system folders in the Windows directory, and the old ones will be renamed “filename.dll.old”.

(continued)

Table 2-2. (continued)

Problem Category	Description of Problem	Solutions
	Windows NT4 SP6a, error occurs installing CRVIEWER.DLL.	Choose IGNORE , and the program will install completely. This does not in any way affect the functionality of the software.
Display	The gray screens in the program appear "blotched" and are not uniformly gray.	Changing your monitor's display settings will fix this problem. Under the CONTROL PANEL, DISPLAY, SETTINGS tab, make sure that the Color Palette is set for High Color (16 bit) or True Color (32 bit) or higher. Note that these options may not be available on all machines, depending on the type of monitor, graphics card, and video driver used.
	Screens are not displayed correctly, display is not optimized.	The IWAIR program display is optimized for screen resolutions of 800 × 600 pixels. At lower resolutions, not all of the IWAIR screens are displayed. The screens appear smaller at higher resolutions.
Printing	Text is cut off at the edges.	Due to the large quantity of data to be displayed on the reports, the margins selected for the reports are only 0.25 inches. Text may be cut off if the printer has a larger unprintable area. Printing functions were tested on an HP Laser Jet 4/4M and higher-grade printers.
	Override values print in reports even though no override values were entered.	If no override values are entered, IWAIR may repeat the calculated emission rates or dispersion factors in the override column of the printed report.
Miscellaneous	Low system resources message is displayed, program crashes, program runs slowly.	IWAIR may be unstable when other applications are also open because of the memory required for running IWAIR. Close all other applications before starting IWAIR to free up the maximum resources for the program. If your computer's resources are still low, reboot the computer and restart IWAIR.